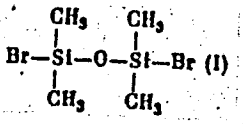
L 16082-66

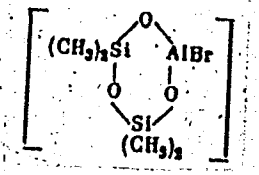
ACC NR: AP6005930

2

The product formed decomposes to form

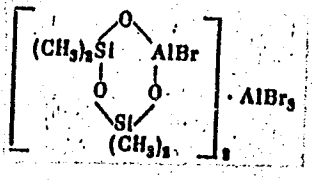


(I) and



(II)

Two molecules of compound (II) then react with one molecule of AlBr to form the complex compound

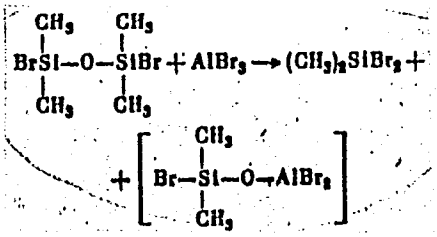


(III)

Under more drastic conditions, the following reaction occurs during distillation of the products at atmospheric pressure:

Card 2/3

L 16082-66
ACC NR: AP6005930



By changing the reaction conditions, one can obtain dimethyldibromosilane, tetramethyldibromodisiloxane, crystalline product (III), and higher α,ω-dibromopolysiloxanes with 3 and 4 silicon atoms. Orig. art. has: 2 tables.

SUB CODE: 07/ SUBM DATE: 10Jul64/ ORIG REF: 001/ OTH REF: 001

Card 3/3

KOPYLOV, V.N.

YEMEL'YANOV, V.S., otv.red.; BARDIN, I.P., red.; VINOGRADOV, A.P., red.; GOL'DANSKIY, V.I., red.; GULYAKIN, I.V., red.; DOLIN, P.I., red.; YEFREMOV, D.V., red.; KRASIN, A.K., red.; LEBEDINSKIY, A.V., red.; MINTS, A.L., red.; MURIN, A.N., red.; NIZE, V.E., red.; NOVIKOV, I.I., red.; SEMENOV, V.F., red.; SOBOLEV, I.N., red.; BAKHAROVSKIY, G.Ya.; nauchnyy red.; BERKOVICH, D.M., nauchnyy red.; DANOVSKIY, N.F., nauchnyy red.; DELONE, N.N., nauchnyy red.; KON, M.A., nauchnyy red.; KOPYLOV, V.N., nauchnyy red.; MANDEL'TSVAYG, Yu.B.; MILOVIDOV, B.M., nauchnyy red.; MOSTOVENKO, N.P., nauchnyy red.; MURINOV, P.A., nauchnyy red.; POLYAKOV, I.A., nauchnyy red.; PREOBRAZHENSKAYA, Z.P., nauchnyy red.; RABINOVICH, A.M., nauchnyy red.; SIMKIN, S.M., nauchnyy red.; SKVORTSOV, I.M., nauchnyy red.; SYSOYEV, P.V., nauchnyy red.; SHORIN, N.A., nauchnyy red.; SHREYBERG, G.L., nauchnyy red.; SHTEYNMAN, R.Ya., nauchnyy red.; KOSTI, S.D., tekhn.red.

[Concise atomic energy encyclopedia] Kratkaia entsiklopediia "Atomnaia energiia." [Tables of isotopes (according to published data available at the beginning of 1958)] Tablitsa izotopov (po dannym, opublikovannym k nachalu 1958. 12 p. Gos. nauch. izd-vo "Bol'shaia sovetskaia entsiklopediia," 1958. 610 p. (MIRA 12:1)

1. Sotrudniki Bol'shoy Sovetskoy Entsiklopedii (for Bakharovskiy, Berkovich, Danovskiy, Delone, Kon, Kopylov, Mandel'tsvayg, Milovidov, Mostovenko, Murinov, Polyakov, Preobrazhenskaya, Rabinovich, Simkin, Skvortsov, Sysoyev, Shorin, Shreyberg, Shteynman).
(Atomic energy)

DUBOVSKIY, N.V., kand.biol. nauk; KOPYLOV, V.N., mladshiy nauchnyy sotrudnik

Interlinear hybridization as a prospective method in increasing the productivity of hens. Ptitsevodstvo 8 no.10:27-32 O '58.
(MIRA 11:10)

1.Ukrainskaya opytnaystantsiya ptitsevodstva.
(Poultry breeding)

L 6672-65 EWT(m)/EWP(k)/EWP(q)/EWP(b) Pf-4/Pad ASD(m)-3 MJW/JD/HW

ACCESSION NR: AR4036010 S/0276/64/000/003/B192/B192

SOURCE: Ref. zh. Tekhnol. mashinostr. Sv. t., Abs. 3B1096

AUTHOR: Khayt, D. M.; Kopyelov, V. N.; Tarakanov, I. L.

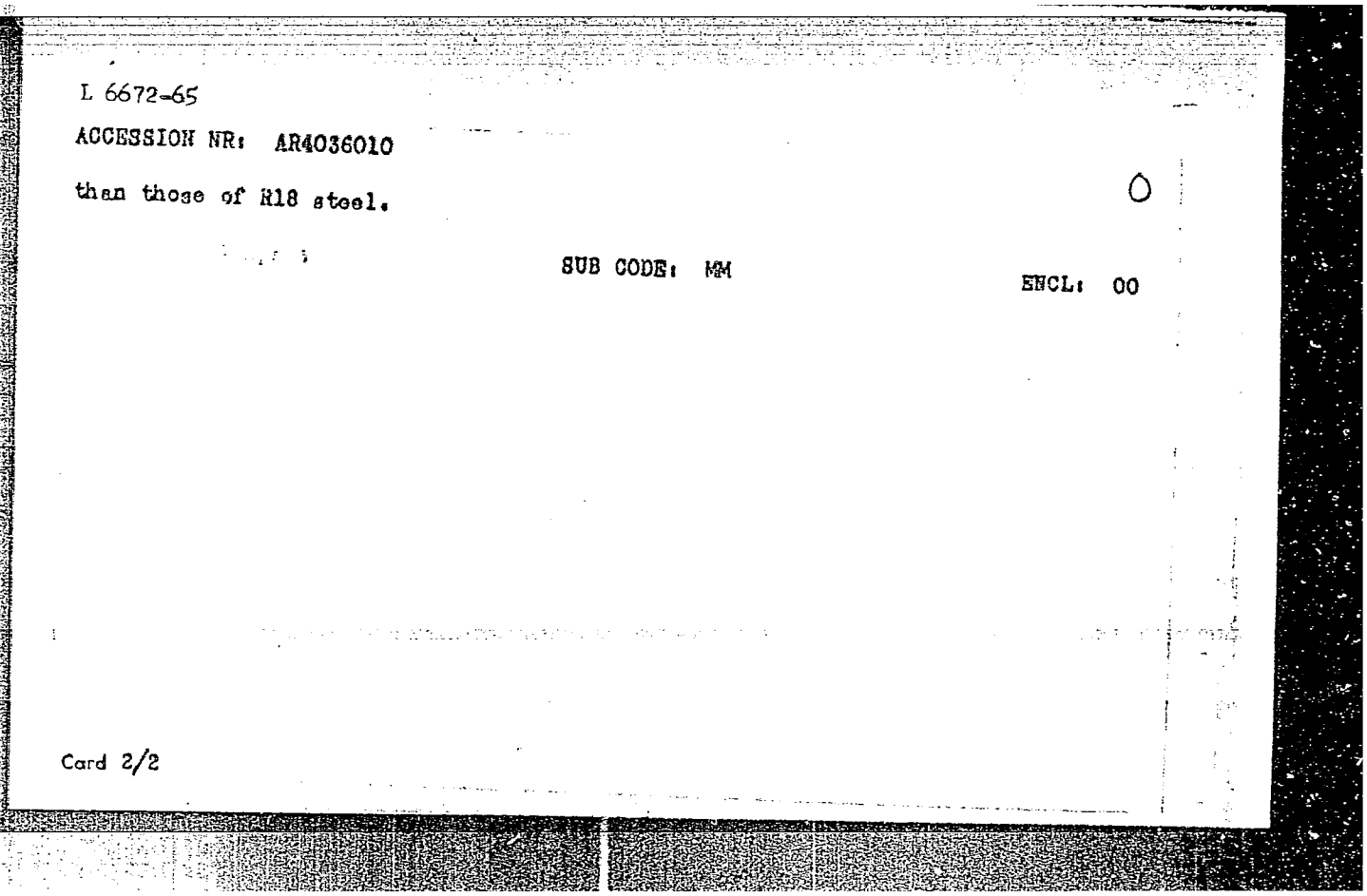
TITLE: The machining of carbon structural steel with cutters made of new high-speed alloys

CITED SOURCE: Sb. Nauka - proiz-vu. Minsk, no. 1, 1963, 27-33

TOPIC TAGS: high speed alloy, high speed cutting tool, carbon steel machining, metal cutting, machine tool, vanadium steel, cobalt steel

TRANSLATION: Results are given of research under production conditions of the cutting properties of high-vanadium and cobalt high-speed steels during the machining of structural carbon steel of medium strength. It was determined that cutting tools of the new high-speed alloys can provide higher productivity and stability than those of high-speed R18 and R9 steels. Through-pass planer cutters lend themselves to production of high-vanadium steel, and at forced-speed operational schedules, such cutters are best made of cobalt-vanadium steel. For scraping operations, tools of cobalt steel type R9k10 provide a severalfold greater stability

Card 1/2



L 6672-65

ACCESSION NR: AR4036010

than those of R18 steel.

SUB CODE: MM ENCL: 00

Card 2/2

KOPYLOV, V.N., inzh.-ekonomist

Daily analysis of the fulfillment of the plan in the spinning shops.
Tekst.prom. 25 no.1:24-26 Ja '65. (MIRA 18:4)

1. Puchezhskiy l'nokombinat.

KOPYLOV, V. N. Cand Agr Sci -- (diss) "~~Improving~~ Increase in the Egg-Laying Capacity of Geese ~~by~~ through (from the effect upon them of) External Factors (Light and Temperature)." Mos, ~~1957~~ 1955. 14 pp 21 cm. (Min of Agriculture RSFSR, Scientific Research Inst ~~for~~ of Poultry Raising ~~Poultry~~), 100 copies (KL, 27-57, 108)

KOPYLOV, V. P.

86-8-3/22

AUTHOR: Kopylov, V.P., Lt. Col.

TITLE: The Fighter Attack Repelled (On The Aviation Training) [Ataka istrebiteley otrazhena (Na aviatsionnykh ucheniyakh)]

PERIODICAL: Vestnik Vozdushnogo Flota, 1957, Nr 8, pp. 11-15 (USSR)

ABSTRACT: Because the mission of bombers is to destroy air targets, says the author, they usually strive to avoid aerial combats, and, as a rule, use anti-fighter maneuvers for this purpose, i.e. fly along an irregular (zig-zag) course and change speed and altitude. However, when an encounter is unavoidable, the bombers employ active defense also, striving to frustrate the enemy's attack and to hit him by accurate fire. For this purpose, keeping the same course and altitude of flight, the bombers maneuver with greater speed, extending or closing their formation, in front and depth. To maintain the same mode of flight it is important that the crew switches on the autopilot before the start of the bombing approach. In this stage of bombing approach, any maneuver or change of course independent of heading corrections, should be excluded. Thus, in most cases, the anti-fighter maneuver may be possible only on the flight course long before the target,

Card 1/8

The Fighter Attack Repelled (Cont.)

when the encounter with the fighters is less probable. Moreover, if the flight was planned at a maximum radius of action, the anti-fighter maneuver is undesirable, because it will reduce the limit of flight. Unforeseen changes in the course and speed of flight considerably complicate the search for and approach to the target in a predetermined time. But, what to do if an encounter with the fighters does take place? The answer of the author is: "to successfully repel the fighters' attack, the anti-fighter maneuver must be combined with accurate fire". As an example of his assertion, the author cites the following fragment of operation taken from the bombers' tactical training: A group of bombers received the task of bombing an enemy object in a predetermined time. The group commander, on the basis of analyses of the air situation, established that the fighters might intercept his group before the approach of the "front line". Because the flight was planned at a maximum radius of action, the anti-fighter maneuver was excluded. The group commander, while preparing the operation, organized an air observation and warning system in flight and also outlined possible changes in combat formation and mutual fire support among the crews.

Card 2/8

The Fighter Attack Repelled (Cont.)

deficiency in aerial gunnery were especially trained on the ground under the supervision of the officer of aerial gunnery service, who utilized special devices and camera-guns for this training. Aerial camera-gunnery during flight presents a preparatory stage to combat aerial gunnery, which trains the flying personnel in skill in the use of airplane artillery weapons for defensive aerial combat. However, says the author, training under conditions close to actual combat is possible only when it is conducted with the participation of fighter airplanes. This requires a thorough preparation for the training and, in particular, elimination of any simplification. The crews of the bombers should be unaware of the number of fighters which may attack them and on which sector of their course it may happen. Because of the difficulty in coordinating the flight of bombers with the fighters which should participate in the training of aerial combat, the author suggests that the fighters should take off from the same airfield as the bombers, on which the pair or flight of fighters may land periodically. Nevertheless, says the author, in spite of the fact that the combat training is organized from the same airfield, the moment of surprise encounter should be preserved for

Card 5/8

Card 6/8 system of training of the gunner-radio operators in group

The Fighter Attack Repelled (Cont.)

aerial combat should be reorganized. Since then great attention has been paid to the team work of the crew. For instance, it happened that less experienced gunner-radio operators had forgotten to fix the initial firing data and to switch on the gyro gunsight before firing. Because, the air speed and altitude may be changed in the course of aerial combat, if the gunner-radio operator does not introduce necessary corrections in the gunsight computor, and the pilot or navigator does not announce them in time the change of mode of flight, errors in firing are unavoidable. Therefore, it is necessary for pilots and navigators to check the gunner-radio operators' preparation for firing, who also should report their operations through airplane intercommunication system [samoletnoye peregovornoye ustroystvo - SPU]. As to the sequence of aerial combat training, the author suggests that if the pilot is capable of controlling his aircraft in group flying, he may also start his combat training in a group. The author says that combat training demonstrations, organized over the airfield, are very useful for this purpose in order to enable the trainees to observe the "dynamics of aerial combat". The demonstration of an aerial

Kopylov, V.P.

LARICHOV,A.N.; BABIKOV,M.A.; VANEYEV,A.I.; ZHITKOV,A.A.; KOPYLOV,V.P.; TRET'YAKOV,M.F.; GALTSYEV,F.F.

V.N.Akimov, Elektrichestvo no.10:86 0'55. (MLRA 8:12)
(Akimov, Valentin Nikolaevich, 1903-1955)

KOPYLOV, V.P.

AUTHOR: Kopylov, V.P., Engineer, 28-6-15/40

TITLE: Electric Equipment for Automobiles and Tractors (Elektrooborudovaniye dlya avtomobiley i traktorov)

PERIODICAL: Standartizatsiya, 1957, # 6, pp 48 - 49 (USSR)

ABSTRACT: Information is given on the new standard "ГОСТ 3940-57", which will take effect on 1 Jan 58, and the changes it will bring to the electrical equipment of automobiles, tractors, agricultural machines, motorcycles and stationary gasoline engines.

The accumulator battery will be connected to the machine by the negative pole. New dustproof and splashproof designs will be introduced. The maximum permissible ambient temperature is raised from +60 to +65°C. The test voltage for devices working on the low-voltage side will be 550 volts (instead of former 220 volts). The ignition coils will be tested for 12 hours under uninterrupted nominal voltage.

The new insulation of "viniflex" increases the heatproof level by 15°C. Test methods have been fully revised and a dustproofness-test is included into the standard for the first time.

It is said that the producer plants will have to do

Card 1/2 serious work with the designs and the technological outfit

KOPYLOV, V.P.

AUTHOR: Kopylov, V.P., Engineer 28-58-2-15/41

TITLE: Tolerances for Connection-Dimensions of Electric Machines (Dopuski na ustanovochnyye razmery elektricheskikh mashin)

PERIODICAL: Standartizatsiya, 1958, Nr 2, pp 44-45 (USSR)

ABSTRACT: A new state standard ("GOST 8592-57") for such dimensions of electric machines which assure connection with other machines without further machining will come into force July 1, 1958 (replacing the "GOSTs" 3729-47 and 5459-50). The new tolerances for the nominal height of the rotation axis, non-parallelism of the shaft rotation axis with the base surface, concentricity of flanges, etc. are indicated. The higher accuracy degree (two degrees are introduced) of the rotation axis height corresponds to ISO recommendations, and surpasses them in the axis-height range from 50 to 100 mm (0.4 mm instead of 0.5 mm). The new standard will eliminate fitting work in assembling and greatly reduce the time necessary for exchange of electric machines at breakdowns.

ASSOCIATION: Komitet standartov, mer i izmeritel'nykh priborov (Committee of Standards, Measures and Measuring Devices)

AVAILABLE: Library of Congress

Card 1/1 1. Electric machinery-Standards 2. Standardization-USSR

KOPYLOV, V.P.

Miniature d.c. motors. Standartizatsiia 24 no.8:46 Ag '60.
(MIRA 13:9)

(Electric motors--Standards)

GETLING, Boris Vladimirovich; BARANOVSKIY, M.A., nauchnyy red.; KOPYLOV, V.P., nauchnyy red.; KOBRINSKAYA, M.V., red.; TOKER, A.M., tekhn. red.

[Reading circuits and diagrams of electrical systems] Chtenie skhem i chertezhei elektroustanovok. Moskva, Vses. uchebno-pedagog. izd-vo Proftekhizdat, 1961. 195 p. (MIRA 14:8)
(Electric circuits) (Electric networks)

Kopylov, V.P.

60-29-9/14

AUTHORS: Groshevoy, G.V., Kopylov, V. P.

TITLE: High-sensitivity Miniature Mirror Galvanometers (Malogabaritnyy zerkal'nyy gal'vanometr vysokoy chuvstvitel'nosti)

PERIODICAL: Trudy Geofizicheskogo instituta AN SSSR, 1955, Nr 29, pp. 73-77 (USSR)

ABSTRACT: The article describes the design and construction of miniature galvanometers. The instrument is characterized by its small size and weight and has dependable mechanical clamping devices, which make it easy to transport and use on expeditions, etc. The operational features of these galvanometers surpass those of imported models. There are 2 figures and 4 references, all USSR.

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Kopylov, V. P. 60-29-13/14

TITLE: "BTC-2" Spectrograph Sighting Head (Vizirnaya golovka spektrografa "BTC-2")

PERIODICAL: Trudy Geofizicheskogo instituta AN SSSR, 1955, Nr 29, pp. 94-97 (USSR)

ABSTRACT: The article describes the design, adjustment and operation of a sighting head and presents the design data on which the construction is based. This sighting head makes it possible to photograph auroras 10 times faster than without it. There are 3 figures and 1 USSR reference.

AVAILABLE: Library of Congress

Card 1/1

SEISMOLOGY

AUTHORS: Groshevoi, G. V., and Kopylov, V. P.

TITLE: Small Dimension Mirror Galvanometer of High Sensitivity

PERIODICAL: Trudy Geofizicheskogo Instituta, Akademiia Nauk SSSR, 1955, No. 29(156), pp 73-77

AVAILABLE: Original W/F Safe

February 24, 1956
W/Finland

KHAYT, D.M., kand. tekhn. nauk; KOPYLOV, V.N.; TARAKANOV, I.I., starshiy prepodavatel'

Machining structural carbon steel with cutting tools made of new high-speed alloys. Nauka - proizv. no.1:27-33 '63. (MIRA 18:3)

1. Glavnyy inzhener Gomel'skogo stankostroitel'nogo zavoda im. S.M. Kirova (for Kopylov). 2. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta (for Tarakanov).

KOPYLOV, V.S.

Machine for diamond grinding and lapping of hard-alloy cutting tools. Mashinostroitel' no.3:20-21 Mr '65. (MIRA 18:4)

KOPYLOV, V.S.

Calculating the efficient positioning of the blocks on the brake bands of drilling rigs. Mash.i neft. obor. no.7:12-15 '64. (MIRA 17:11)

1. Zavod "Barrikady" g. Volgograd.

KOPYLOV, V.T.; POVAROV, G.D.

Two-cam self-centering readjusting chuck. Mashinostroitel' no.12:20 D '61. (MIRA 14:12)
(Chucks)

KOPYLOV, V.T.; ZHARKOVA, L.I.

Optical pocket angle gauge. Mashinostroitel' no.1:30 Ja '62.
(MIRA 15:1)
(Gauges)

L 12991-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Ps-4/Pc-4/Pr-4
RM/WW

ACCESSION NR: AP3001552 S/0184/63/000/003/0028/0029

AUTHOR: Vlasov, P. V. (Engineer); Kopy*lov, V. T. (Engineer)

TITLE: Testing and installation of fiberglass pipes

SOURCE: Khimicheskiye mashinostroyeniye, no. 3, 1963, 28-29

TOPIC TAGS: fiberglass pipe, glass fiber, glass braid, polyester resin, PN-1, active media, pipe joint

ABSTRACT: Fiberglass pipes were tested at the Rubezhanskiy khimicheskiy kombinat (Rubezhanka Chemical Works) and were found satisfactory in various active media. Pipes and their fittings were made in the Severodonetskiy zavod stekloplastikov (Severodonetskiy Fiberglass Plant) from glass fibers or braids impregnated with a binder and wound on a mandrel. The binder consisted of: 100% polyester resin PN-1, 5% accelerator (naphthenate of cobalt), and 3% initiator (benzene isopropyl hydrogen peroxide). The hardening of the pipes was accomplished in polymerization chambers at 100C. Pipes with inside diameters of 44, 89, and 133.3 mm, 2-4 mm thick and 6 m long, were used for industrial purposes. It is concluded that fiberglass pipes can successfully replace scarce lead and special steel pipes in highly active media. Various kinds of fiberglass pipes have satisfactory mechanical strength. Several types of pipe connections and joints are illustrated and described.

Card 1/2

CHUMACHENKO, L.R., inzh.; KOPYLOV, V.T., inzh.; VI..OV, P.V., inzh.

Manufacturing parts from pressed wood. Khim. i neft. mashinostr. no.4:41-42 O '64. (MIRA 17:12)

CHUMACHENKO, L.R.; KOPYLOV, V.T.; VLASOV, P.V.

Use of glass pipes in the Rubezhnoye Chemical Plant. Khim. prom. no.4:71-74 O-D '64. (MIRA 18:3)

ZAKHARKIN, L.I.; KOPYLOV, V.V.; SOROKINA, L.P.

Action of diisobutylaluminum chloride on some ketones. Izv. AN SSSR. Ser. khim. no.7:1194-1197 '65. (MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

STANKO, V.I.; KOPYLOV, V.V.; KLIMOVA, A.I.

Hydrocarbons of the carborane series. Zhur. ob. khim. 35 no.8:1433-1436 Ag '65. (MIRA 18:8)

KOPYLOV, V. Ye.

Deflection of diamond drill holes. Razved. i okh. nedr 28 no.6: 21-24 Je '62. (MIRA 15:10)

1. Ural'skoye geologicheskoye upravleniye.

(Boring)

KOPYLOV, V. Ye.

Best drilling system using diamond-impregnated bits under conditions characterizing the Kirovograd expedition. Izv. vys. ucheb. zav.; geol. i razv. 3 no.12:98-103 D '60. (MIRA 14:5)

1. Sverdlovskiy gornyy institut imeni V. V. Vakhrusheva.
(Kirovograd region--Boring)

SOV/132/58-11-8/17

AUTHOR: Kopylov, V.Ye.

TITLE: The Experience in Assembling and Erecting Metallic Mine Headframes (Opyt montazha i pod"yema metallicheskikh koprov)

PERIODICAL: Razvedka i okhrana nedr, 1958, Nr 11, pp 28 - 31 (USSR)

ABSTRACT: The author suggests that a metallic headframe of a mine be assembled in a horizontal position on the ground and that it should be erected when it is assembled. This will simplify all assembling operations and shorten the time of assembly by 22.4% in comparison with assembly in a vertical position. The method of horizontal assembly was elaborated by engineers A.P. Dukhnin and G.N. Berzhets for the metallic headframes of the Gribanov or VM-1 types. The method is described in detail. There are 3 diagrams and 3 Soviet references.

ASSOCIATION: Rudnik Lëvikha (The Lëvikh Mine)

Card 1/1

KOPYLOV, V.Ye.

Wear resistance of Russian small diamond drills. Izv. vys. ucheb. zav.; geol. i razv. no.11:123-127 N '60. (MIRA 14:2)

1. Sverdlovskiy gornyy institut im.V.V. Vakhrusheva.
(Boring machinery) (Mechanical wear)

KOPYLOV, V.Ye.

Deflection of inclined holes in diamond drilling. Razved. i okh. nedr 26 no.6:43-45 Je '60. (MIRA 15:7)

1. Kirovgradskaya ekspeditsiya.
(Boring)

KOPYLOV, V.Ye.; CHISTYAKOV, Yu.A.

Using drill-pipe lubricant in the diamond drilling of structural-prospecting wells. Izv. vys. ucheb. zav.; neft' i gaz 7 no.9:27-31 '64. (MIRA 17:12)

1. Tyumenskiy industrial'nyy institut i Sverdlovskiy gornyy institut.

KOPYLOV, V.Ye.; CHISTYAKOV, Yu.A.

Damping the longitudinal vibrations of a drilling string. Izv. vys. ucheb. zav.: neft' i gaz 8 no.1:29-34 '65. (MIRA 18:2)

1. Tyumenskiy industrial'nyy institut i Sverdlovskiy gornyy institut.

36363
S/081/62/000/005/106/112
B167/B101

15.9201

AUTHORS: Kopylov, Ye. P., Yemel'yanov, D. P., Lazaryants, E. G. Rumyantseva, A. N., Tsaylingol'd, V. L., Epshteyn, V. G.

TITLE: Peculiarities of vulcanizates based on methylvinylpyridine rubber hydrochlorides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 644-645, abstract 5P298 (Uch. zap. Yaroslavsk. tekhnol. in-ta, v. 6, 1961, 157 - 162)

TEXT: A study of the co-polymers of butadiene and 2-methyl-5-vinylpyridine in the ratio 85:15 (СКМВП-15А)(SKMVP-15A) and also in combination with styrene in the ratio 85:5:25 (СКС-25-МВП-5А)(SKS-25-MVP-5A) was made. The crumbled vulcanized rubber was immersed in HCl solution (density 1.19) for 1, 2, 4, 12, and 24 hrs, washed with water, and dried 4-5 hrs at 55-60°C. A maximum of 4.3% and ~1% of HCl combines with SKMVP-15A and SKS-25-MVP-5A, respectively, corresponding to one HCl molecule per methylvinylpyridine radical. Mixtures of these polymers are more tacky and show less scorching than mixtures of the original rubbers. On increasing the content of combined HCl the plasticity of the mixtures decreases, but that of the black-

Card 1/2

AL'BAM, M.A.; PISARENKO, A.P.; LAZARYANTS. E.G.; Prinimali uchastiye: ALADINSKAYA, I.P.; VOLKOVA, S.A.; DYUNINA, V.G.; GROMOVA, V.A.; KOSMODEM'YANSKIY, L.V.; KOPYLOV, Ye.P.; ROKHMISTROVA, A.P.; SHUSHKINA, Ye.N.

High-styrene rubber mixtures for the manufacture of microporous non-shrinking rubbers. Kauch. i rez. 22 no.7:1-3 Jl '63. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut plenochnykh materialov i iskusstvennoy kozhi i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.
(Rubber, Synthetic)

L 18074-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD/ESD-3 Ps-4/Pc-4/Pr-4
RM/WW/MAY
ACCESSION NR: AP3004252 S/0138/63/000/007/0009/0013

AUTHORS: Kopy*lov, Ye. P.; Epshteyn, V. G.; Lazaryants, E. G.; Tsaylingol'd, V. L.; Mantseva, L. N.

TITLE: Properties of vulcanizates of methylvinylpyridine rubbers with coordination bonds

SOURCE: Kauchuk i rezina, no. 7, 1963, 9-13

TOPIC TAGS: vulcanizate, functional group, complex compound, reinforcing filler, carbon black, coordination bond, complex forming agent, organic acid

ABSTRACT: Tests are reported on vulcanizates from rubbers with coordination bonds formed by a reaction of methylvinylpyridine rubber (MVPR) with the chlorides of zinc, cadmium, and tin, or zinc oxide. The plasticity of vulcanized rubber containing up to 50% carbon black showed a marked linear decrease when up to 5% zinc chloride was included in the formula, but its tensile strength, resistance to abrasion, and its modulus at 300% elongation went up. Similar observations were made with additions of tin chloride and cadmium chloride, as well as Fillblack O or calcium carbonate. It was concluded that incorporation into MVPR of zinc chloride and the like resulted in formation of specific coordination bonds, substan-

Card 1/2

L 18074-63
ACCESSION NR: AP3004252

2

tiated by the fact that vulvanized rubbers of equal tensile strength were prepared from MVPR stock containing either 50% carbon black or 40% carbon black plus 1% zinc chloride. The investigation also covered the effect of metacrylic and benzoic acids on the properties of unfilled vulcanized rubbers obtained by polymerization of MVPR in the presence of 10% zinc chloride. The addition of 10% of one of these acids produced a transparent rubber possessing a triple tensile strength (as compared with the control) without affecting its plasticity. Orig. art. has: 4 charts and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK, Yaroslavskiy tekhnologicheskiy institut (Scientific Research Institute of Monomers for Synthetic Rubber, Yaroslavl' Technical Institute)

SUBMITTED:	00	DATE ACQ:	21Aug63	ENCL:	00
SUB CODE:	MA	NO REF SOV:	005	OTHER:	001

Card 2/2

S/138/62/000/010/002/008
A051/A126

AUTHORS: Kopylov, Ye.P., Epshteyn, V.G., Lazaryants, E.G., Tsaylingol'd, V.L.

TITLE: Production of highly-resistant vulcanizates based on complex compounds of methylvinylpyridine rubbers and metal salts

PERIODICAL: Kauchuk i rezina, no. 10, 1962, 19 - 26

TEXT: The authors discuss the production of copolymers containing active functional groups in the molecular chains: carboxylic, pyridine, aldehyde, etc. The vulcanizates produced from these copolymers have new properties, characteristic of the products from reaction of functional groups with other components of the rubber mix. Reference is made to previous studies on this subject and to work conducted by the authors on the features of complex compounds of СКМВП (SKMVP) and the salts of methylvinylpyridine rubbers and acids. The reaction of SKMVP complex-formation is noted only with salts that form complex formations with the individual pyridine and its homologues. The properties of the produced vulcanizates are explained only by the presence of an inherent special vulcanizing structure - that of coordinated transverse bonds. The high tear-resistance

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noted in non-filled vulcanizates with coordinated bonds is determined by the mobility of the transverse bonds in the polymer complexes. Experimental data showed that the highest tensile properties of the rubbers are reached when zinc chloride is used with the simultaneous introduction of magnesium chloride and zinc oxide into the rubber. It is concluded that functional groups of methylvinylpyridine rubbers form complex compounds with certain metal halogenides and salts with acids. The non-filled and the carbon-black vulcanizates with coordinated bonds have high tensile properties, including a high wear-resistance. The elevated tensile strength in the presence of coordinated bonds in the vulcanizates is explained by the mobility of these bonds and the ability of them to regroup during deformation. There are 6 figures and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka i Yaroslavskiy tekhnologicheskiy institut (Scientific Research Institute of Monomers for Synthetic Rubber and Yaroslavl' Institute of Technology)

L 40306-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM S/0190/65/007/003/0523/0530
ACCESSION NR: AP5008378

AUTHORS: Kopylov, Ye. P.; Lazaryants, E. G.; Epshteyn, V. G.

TITLE: Nature of the intermolecular bonds arising in the structuration of carboxyl-bearing rubber by monobasic amines and univalent and divalent metals

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 3, 1965, 523-530

TOPIC TAGS: intermolecular bond, crosslinked copolymer, rubber, amine, vulcanization, methacrylic acid, styrene, vinyl

ABSTRACT: The authors used as a base the triple copolymers of divinyl, styrene, and methacrylic acid containing 1.25% combined methacrylic acid. The amines were mixed with rubber at 30-40C. Ammonia was introduced in an aqueous solution with subsequent drying in a vacuum at 60-80C. The mechanical properties were then measured. It was found that strong bases among monobasic amines (piperidine, ethylamine, ammonia) cause structuration of rubber. Weaker bases (aniline, methylethylpyridine) plasticize the rubber effectively. The structuration observed is due to the formation of strong hydrogen bonds between the carboxyl groups of the different rubber molecules. These bonds are strengthened by ion-dipole interaction in the carboxyl-amine-carboxyl groups. Sodium hydroxide is a much stronger

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L 40306-65
ACCESSION NR: AP5008378

2

vulcanizing agent than the amines. The authors suggest that when carboxyl-bearing rubber is vulcanized by oxides, hydroxides, or salts of bivalent metals, the crosslinkages are mainly neutral salts or basic salts linked together by hydrogen bonds. One of the characteristic features of pure-gum rubber from carboxyl-bearing crude rubber is its great strength when monovalent or divalent metals are used in vulcanization. This strength is due to the vulcanization structure, having a capacity for regrouping during strain, allowing local overstrains to be dissipated. These properties are possessed also by pure-gum vulcanizates of natural rubber when the crosslinkages are semipolar, hydrogen, or ionic. Such crosslinkages are thus guarantees of strong vulcanizates obtained from different types of natural rubber. Orig. art. has: 4 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka (Scientific Research Institute of Monomers for Synthetic Rubber); Yaroslavskiy tekhnologicheskiy institut (Yaroslavl Technological Institute)

SUBMITTED: 08Jun64 ENCL: 00 SUB CODE: OC, MT

NO REF SOV: 010 OTHER: 020

Card 2/2

L 7879-66 EWT(m)/EPF(c)/EWP(j)/T RPL RM

ACC NR: AP5025030 SOURCE CODE: UR/0286/65/000/016/0083/0083

AUTHORS: Belyayev, V. A.; Gromova, V. A.; Zemit, S. V.; Kavrayskaya, N. L.; Kopylov, Ye. P.; Kosmodem'yanskiy, L. V.; Kostin, D. L.; Kut'in, A. M.; Lazaryants, E. G.; Romanova, R. G.; Tsaylingol'd, V. L.; Shikhalova, K. P.; Shushkina, Ye. N.

ORG: none

TITLE: Method for obtaining synthetic rubber. Class 39, No. 173942

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 83

TOPIC TAGS: rubber, synthetic rubber, butadiene, styrene, polymer, copolymer, polymerization

ABSTRACT: This Author Certificate presents a method for obtaining synthetic rubber by polymerization or copolymerization of dienes with vinyl monomers, for example, butadiene with α-methylstyrene, in aqueous emulsion at low temperatures in the presence of known free-radical-initiators and regulators employing emulsifiers. To improve the polymer properties, esters of monoalkylbenzoic acid are used as emulsifiers.

SUB CODE: 11,07/ SUBM DATE: 03Jul63

Card 1/1 nw UDC: 678.762 678.762-134

BUGROV, V.P.; YEMEL'YANOV, D.P.; KOPYLOV, Ye.P.; LAZARYANTS, E.G.

Use of formulas with a low sulfur content in the vulcanization of methylvinyl pyridine rubber. Kauch. i rez. 24 no.2:8-10 F '65. (MIRA 18:4)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

L 47175-66 EWT(m)/EWP(j)/T/EWP(v) IJP(c) WW/RM

ACC NR: AP6032177 (N) SOURCE CODE: UR/0069/66/028/005/0675/0677

35
33
B

AUTHOR: Kopylov, Ye. P.; Lazaryants, E. G.; Epshteyn, V. G.

ORG: Scientific Research Institute of Monomers for Synthetic Rubber (Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka); Yaroslavl' Technological Institute (Yaroslavskiy tekhnologicheskiy institut)

TITLE: Effect of labile bonds on the adhesive properties of rubber mixtures based on pyridine and carboxyl-containing resins

SOURCE: Kolloidnyy zhurnal, v. 28, no. 5, 1966, 675-677

TOPIC TAGS: rubber adhesive property, synthetic resin, bond formation effect, RUBBER, ADHESIVE BONDING, PYRIDINE

ABSTRACT: To determine the effect of labile hydrogen bonds on the adhesive properties of rubber compositions in the contact zone, mixtures containing rubber 100, Rubrax 5, stearin 2, ZnO 5, and channel black 50 parts were prepared and pressed for 20 min at 55C between aluminum foils to form thin (~4 mm) plates. After 2 and 24 hr standing periods, strips (cut out from the plates) were pressed together for 15 sec under 1 kg pressure and then separated using 300 g weights. The adhesion was indicated by the time of complete separation of the plates. Adhesion of the mixtures varied depending on the rubber used and on the substitution of the other components of the initial mixture. Addition of eight parts of rubresine (a condensation product of p-nonylphenol and formaldehyde) to the compositions containing SKMVP-15ARK rubber (a copoly-

 UDC: 541.183:541.64

L 44199-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6015673 (A) SOURCE CODE: UR/0413/66/000/009/0076/0076

INVENTOR: Lazaryants, E. G.; Aleshin, A. M.; Gromova, V. A.; Zemit, S. V.; Kopylov, Ye. P.; Kosmodem'yanskiy, L. V.; Romanova, R. G.; Troitskiy, A. P.; Tsaylingol'd, V. L.; Shikhalova, K.P.; Shushkina, Ye.N.; Kostin, D. L.

ORG: none

TITLE: Preparation of divinyl-alpha-methylstyrene rubber. Class 39, No. 181294

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 76

TOPIC TAGS: rubber, methylstyrene rubber, alpha methylstyrene, divinyl

ABSTRACT: This Author Certificate introduces a method of preparing divinyl-alpha-methylstyrene rubber by emulsion copolymerization of divinyl with alpha-methylstyrene at 20C and above in thr presence of persulfate initiators and emulsifiers. To increase the polymerization rate and improve the conditions for the granular coagulation of latex, commercial grades of sodium salts of the synthetic fatty acids C_{10}-C_{16}

Card 1/2 UDC: 678.762.2-134.62

ACC NR: AP7002541 (A) SOURCE CODE: UR/0413/66/000/023/0017/0017

INVENTOR: Lazaryants, E. G.; Ivanova, A. I.; Kopylov, Ye. P.; Bogomolov, B. D.; Bugrov, V. P.; Pisarenko, A. P.; Rubina, S. I.; Chudakov, M. I.; Kosmodem'yanskiy, L. V.; Yemel'yanov, D. P.; Tsaylingol'd, V. L.

ORG: none

TITLE: Method of obtaining active lignin. Class 12, No. 188966

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 17

TOPIC TAGS: rubber, active lignin, lignin, organic solvent, rubber chemical

ABSTRACT: This Author Certificate introduces a method of preparing active lignin by treatment with alkali. To increase the reinforcing properties of the lignin when it is introduced into rubber in the dry state, an alkali solution of the lignin is treated with water-soluble organic solvents such as alcohols, ketone, and rosin soap precipitated with an acid in the finely disperse state and then dried. [Translation]

[NT]

SUB CODE: 07/SUBM DATE: 17Feb64/

Card 1/1 UDC: 547.992.3-188.07

KOPYLOV, Yu.

Eliminate shortcomings in driver training. Avt. transp. 36 no. 6:42-43 Je '58. (MIRA 11:7)

1. Zamestitel' direktora Dal'nevostochnogo uchebnogo kombinata.
(Automobile drivers)

KOPYLOV, YU M

Soviet cosmic ray stations. Wright-Patterson Air Force Base, Prepared by the Technical Documents Liaison Office, 1961

60 l. illus., diagrs., maps, tables. (MCL-981/1 & 2)

Translated from the original Russian: Sovetskiye stantsii kosmicheskikh luchey, Moscow, 1960.

Bibliography: l. 58-60

KOPYLOV, Yu.A., Cand Phys-Math Sci--(diss) "Kinetics of electroconductivity and photoconductivity of liquid semiconductors." Dnepropetrovsk, 1958. 13 pp (Min of Higher Education UkSSR. Dnepropetrovsk State U im 300th Anniversary of Unification of the Ukraine with Russia), 120 copies (KL,48-58, 101)

Kopylov, Yu. A.

82144
SOV/81-59-6-18632

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 6, p 75 (USSR)

24-2110

AUTHORS: Kopylov, Yu.A., Bobyl', V.G.

TITLE: The Ionic Electric Conductivity of Liquids and Crystals

PERIODICAL: V sb.: Fiz. dielektrikov. Moscow, AS USSR, 1958, pp 70-75

ABSTRACT: The dependence of the electric conductivity σ of solutions and ion crystals on various parameters (temperature T, concentration of the solution, etc) was calculated. The dissociation degree α of the molecules of the dissolved substance (concentration of the charge carriers in ionic semiconductors) is calculated on the basis of assumptions concerning the dependence of the rates of recombination and generation of free charge carriers on the number of filled or free places in the crystal lattice or in the solution. The conclusions of the theory concerning the dependence of σ on α and T, as well as the dependence of the time of relaxation of the dissociation processes on the dissociation energy agree qualitatively with the experimental data.

Card 1/1

Yu. Pleskov
Dnepropetrovsk Inst. Civil Engineering

67193

5.4600 SOV/58-59-7-15684

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 7, p 146 (USSR)

AUTHORS: Bobyl', V.G., Kopylov, Yu.A.

TITLE: The Photoconductivity of Some Organic Solutions

PERIODICAL: V sb.: Fiz. dielektrikov. Moscow, AS USSR, 1958, pp 96 - 98

ABSTRACT: The authors studied the variation in electrical conductivity of solutions of chloroform and bromoform under the action of ultraviolet radiation. For substances that only possess singly charged ions the authors derive theoretical time dependences of the conductivity when radiation is switched on and off. It is demonstrated that the theoretical and experimental curves coincide. This is considered a proof of the ionic character of photoconductivity in organic solutions. The authors point out the possibility of determining the energy of dissociation of some substances from the curves of the drop in electrical conductivity after the discontinuation of irradiation. (Dnepropetr. inzh.-stroit. in-t, Dnepropetrovsk, USSR).

A.A. Mostovskiy

Card 1/1

KOPYLOV, Yu.A.

Conductivity probe method in the study of the electric conductivity of liquids. Izv.vys.ucheb.zav.; fiz. no.6:135-138 '59. (MIRA 13:6)

1. Poltavskiy institut inzhenerov sel'skokhozyaystvennogo stroitel'stva.
(Electric conductivity)

33672
S/058/61/000/012/037/083
A058/A101

9.4177 (1035)

AUTHORS: Mitskevich, P. K., Bobyl', V. G., Kopylov, Yu. A.

TITLE: Effect of temperature on photoconductivity of chloroform, bromoform and iodoform solutions in ethyl ether

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1961, 285, abstract 12D80 ("Sb. nauchn. tr. Dnepropetr. inzh.-stroit. in-t", 1960, no. 9, 139-142)

TEXT: The effect of temperature (from +16° to -16°C) on the value of photoconductivity (Φ) and the character of attainment of a steady photocurrent value were studied in chloroform, bromoform and iodoform solutions in ethyl ether. Φ increases with increasing temperature. The temperature dependence of Φ for organic solutions that was obtained theoretically earlier was substantiated: $\Phi = (A/T)\exp(-B/T)$, where A and B are constant coefficients for constant values of the electric-field strength and incident-light intensity.

V. Lyubin

[Abstracter's note: Complete translation]

Card 1/1

ACCESSION NR: AP4025082 S/0139/63/000/006/0008/0014

AUTHOR: Kopylov, Yu. A.

TITLE: The law of photocurrent kinetics in liquid organic semiconductors

SOURCE: IVUZ. Fizika, no. 6, 1963, 8-14

TOPIC TAGS: semiconductor, photocurrent, organic substance, electric conductivity kinetic equation, absorption spectrum, potential well, spectrograph ISP 28, lamp SVDSh 250

ABSTRACT: An analytic model has been devised to explain the action of ultraviolet radiation on organic liquid semiconductors, causing changes in their electrical conductivity by certain internal photoemission effects. Typical photocurrent i versus time t curves are plotted, and a set of kinetic equations describing rate c change of metastable and transitional electron concentrations as a function of thermal agitation and radiation action is given. Potential wells are described to explain complete absorption in short wave-length bands. A series of experiments is performed with ethyl iodide in diethyl ether solutions to test the theoretical model. The absorption spectra were recorded on an ISP-28 spectrograph with maximu

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ACCESSION NR: AP4025062

photocurrent emission in the red absorption band. An increase in dielectric permittivity from 4.33 for ether to 7.40 for ethyl iodide was noticed. Under mercury-quarts lamp SVDSh-250 radiation the photocurrent from the solution increas to a maximum at the 6.5% concentration level and fell sharply to a negative value at 9.5% concentration level. For small concentrations the electron density is the given by

$$n = n_\infty - (n_\infty - n_0)\exp\left(-\frac{1}{\tau'}t\right),$$

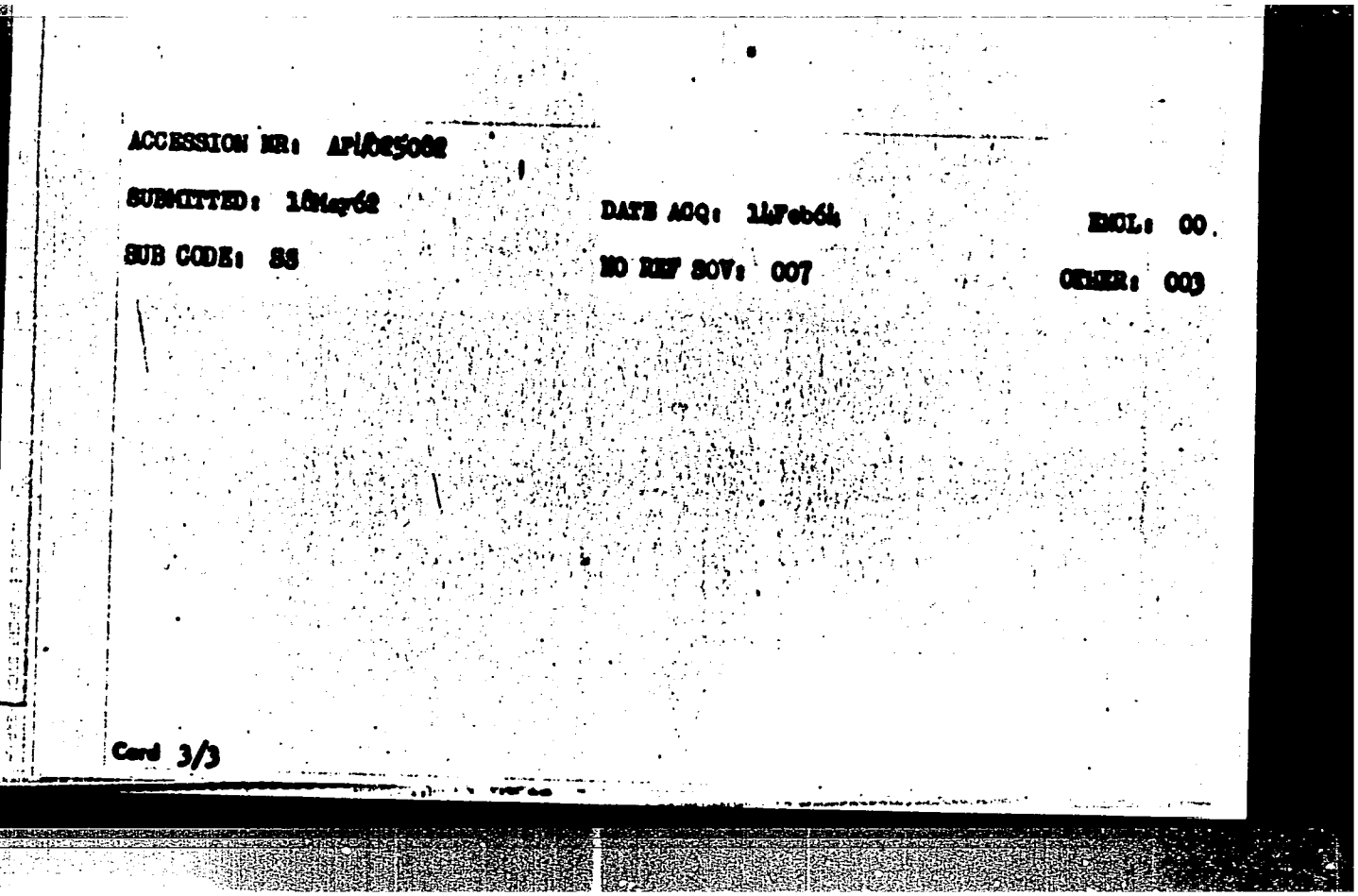
and for concentrations greater than 9%, by

$$n = n_\infty + (n_0 - n_\infty)\exp\left(-\frac{1}{\tau}t\right),$$

which corresponds to the case of negative photoconductivity. Orig. art. has: 14 formulas and 7 figures.

ASSOCIATION: Dnepropetrovskiy inzhenerno-stroitel'nyy institut (Dnepropetrovsk Structural Engineering Institute)

Card 2/3



ACCESSION NR: AP1025082

SUBMITTED: 18Mar62 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: SS NO REF SOV: 007 OTHER: 003

Card 3/3

ACCESSION NR: AP4041847 S/0139/64/000/003/0050/0055

AUTHORS: Kopy*lov, Yu. A.; Nemchenko, A. M.

TITLE: Regeneration of charge carriers in organic liquids

SOURCE: IVUZ. Fizika, no. 3, 1964, 50-55

TOPIC TAGS: organic dielectric, cyclic hydrocarbon, catalysis, electrode, electrolyte, controlled energy release

ABSTRACT: With an aim at a possible application of the regeneration of carriers in organic liquids to the injection of carriers for the purpose of controlling electric devices, the author reviews the connection between this phenomenon and the formation of metastable states of radicals in the electrodes, developed for the most part by A. N. Frumkin (Kinetika elektrodny*kh protsessov, Kinetics of electrode processes, izd. MGU, 1952) and by F. F. Vol'kenshteyn and V. L. Bonch Bruyevich (Problemy* kinetiki i kataliza, Problems of kinetics

Card 1/3

ACCESSION NR: AP4041847

and catalysis, VIII, AN SSSR, Moscow, 1955). Experiments were carried out with cyclohexanone, for which the maximum current is the largest. The experiments have established that the carriers go over into an electrically neutral metastable state following the discharge on the electrode. When the voltage is reversed, the radicals acquire a charge from the electrode, regenerate in the form of carriers, and go into the liquid. Both positive and negative carriers can become regenerated in principle, but only positive carriers are regenerated in cyclohexanone. A probe method described earlier (Yu. A. Kopy*lov, Izv. vuzov SSSR, Fizika, no. 6, 1959) was used to investigate the kinetics of the variation of the carrier density in different points in the gap between the electrodes. It is demonstrated that the Langevin method cannot be used to measure mobility in organic liquids. The conductivity of cyclohexanone is found to be governed predominantly by positive carriers. It is concluded that electric devices can be controlled by using carrier regeneration. Orig. art. has: 4 figures.

Card 2/3

ACCESSION NR: AP4041847

ASSOCIATION: Dnepropetrovskiy inzhenerno-stroitel'skiy institut (Dnepropetrovsk Construction Engineering Institute)

SUBMITTED: 27Nov62 ENCL: 00

SUB CODE: EM, GC NR REF SOV: 007 OTHER: 006

Card 3/3

L 12467-65 EWT(1)/EPA(s)-2/EWG(k)/EWT(m)/EWP(j)/T Pz-6/Pc-4/Pr-4/Pt-10
APWL/ASD(a)-5/ESD(dp)/ESD(t) AT/RM
ACCESSION NR: AP4047345 S/0139/64/000/005/0028/0033

AUTHOR: Kopylov, Yu. A.; Trofimova, T. N.; Stolovitskiy, Yu. M.; Nemchenko, A. M. B

TITLE: Certain laws governing photoconduction in liquid organic semiconductors

SOURCE: IVUZ. Fizika, no. 5, 1964, 28-33

TOPIC TAGS: organic semiconductor, liquid organic semiconductor, photoconducting iodomethane, chlorobenzene, bromobenzene, ethyl ether

ABSTRACT: An intensive investigation of photoconductivity in liquid organic semiconductors has been started at the Dnepropetrovsk Civil Engineering Institute. The absorption spectra, electrical conductivity, and photoconductivity were measured for methylene iodide chlorobenzene, iodobenzene, or bromobenzene, and their binary systems with ethyl ether. It was found that in the binary systems, photoconductivity changed from positive to negative at certain values of the haloorganic compound concentration. In one-component samples the photoconductivity-exciting radiation wavelength is close to the long-

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L 12467-65
ACCESSION NR: AP4047345

wave absorption edge, while in binary systems having negative photoconductivity it lies far above the wavelength limits of intrinsic absorption. In the absorption band of the system the character of the negative photoconductivity changes; for bromobenzene negative photoconductivity changes to positive. Orig. art. has: 8 figures and 1 table.

ASSOCIATION: Dnepropetrovskiy inzhenerno-stroitel'nyy institut (Dnepropetrovsk Civil Engineering Institute)

SUBMITTED: 12Apr63 ENCL: 00 SUB CODE: SS, EM

NO REF SOV: 003 OTHER: 000 ATD PRESS: 3126

Card 2/2

L 39405-65 EPA(s)-2/EWA(h)/EWP(j)/EWT(l)/EWT(m)/EEC(t)/T Pc-4/Pt-10/Pz-6/Peb

AP5006060 0139/65/000/001/0106/0112

AUTHOR: Kopylov, Yu. A.; Trofimova, T. N.; Stolovitskiy, Yu. M.; Nemchenko, A. M.

TITLE: Investigation of causes of negative photoconductivity in liquid organic semiconductors

SOURCE: IVUZ. Fizika, no. 1, 1965, 106-112

TOPIC TAGS: organic semiconductor, photoconductivity, negative photoconductivity, photoconductivity quenching

ABSTRACT: An analysis is made of the applicability of explanations of negative [illegible] in solid semiconductors to liquid binary systems made up of di- [illegible] organic halide derivatives. An experiment [illegible] [illegible] system comprising [illegible] [illegible] methane is briefly described [illegible] that explana- [illegible] the assumption that the active radicals [illegible] the surface [illegible] conductor are not applicable, and that the [illegible] explana- [illegible] the notion of a decrease [illegible] [illegible] model previously developed by the authors (Kopylov, Izv.

Card 1/2

L 39405-65
ACCESSION NR: AP5006060

AN SSSR ser. fiz. v. 24, 2, 1960 and Izv. vuzov SSSR, Fizika, no. 6, 1963) is further extended. This mechanism deals with the occurrence of charge carriers, their drift in the electric field, and recombination, and is used to set up equations for the equilibrium states and for the conditions under which positive and negative photoconductivity and temperature or optical quenching of the photoconductivity can be observed. The resultant short-range order model scheme and the equations are in qualitative agreement with the previously performed measurements of the variation of photoconductivity in the investigated liquids. The model incorporates the formal elements of the band model, agrees with the experimentally established presence of nonradiative transitions, and does not contradict any other electric and photoelectric properties of the liquids. Orig. art. has: 1 figure and 7 formulas.

ASSOCIATION: Dnepropetrovskiy inzhenerno-stroitel'nyy institut (Dnepropetrovsk Engineering-Construction Institute)

SUBMITTED: 01Jul63 ENCL: 00 SUB CODE: OP, OC

NR REF SOV: 012 OTHER: 006

Card 2/2

KOPYLOV, Yu.A.

Development of the concepts of photoconductivity of ether solution of halo derivatives. Elektrokhimiia 1 no.5:579-584 My '65. (MIRA 18:6)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

KORYLOV, Yu.A.; NEMCHENKO, A.M.

Use of probe methods in the study of electroconductivity of organic liquids. Elektrokhimiia 1 no.7:779-787 Jl '65.
(MIRA 18:10)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

KOPYLOV, Yu.A.; TROFIMOVA, T.N.; STOLOVITSKIY, Yu.M.; NEMCHENKO, A.M.

Study of the causes of negative photoconductivity in liquid organic semiconductors. Izv. vys. ucheb. zav.; fiz. 8 no.1: 106-112 '65. (MIRA 18:3)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

L 58320-65 EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/EWP(j)/EEC(t) Pz-6/Pc-4/Pr-4/
Pt-7 IJP(c) AT/RM
ACCESSION NR: AP5011388 UR/0139/65/000/002/0112/0118 62 61 0

AUTHORS: Kopylov, Yu. A.; Stolovitskiy, Yu. M.; Trofimova, T. N.

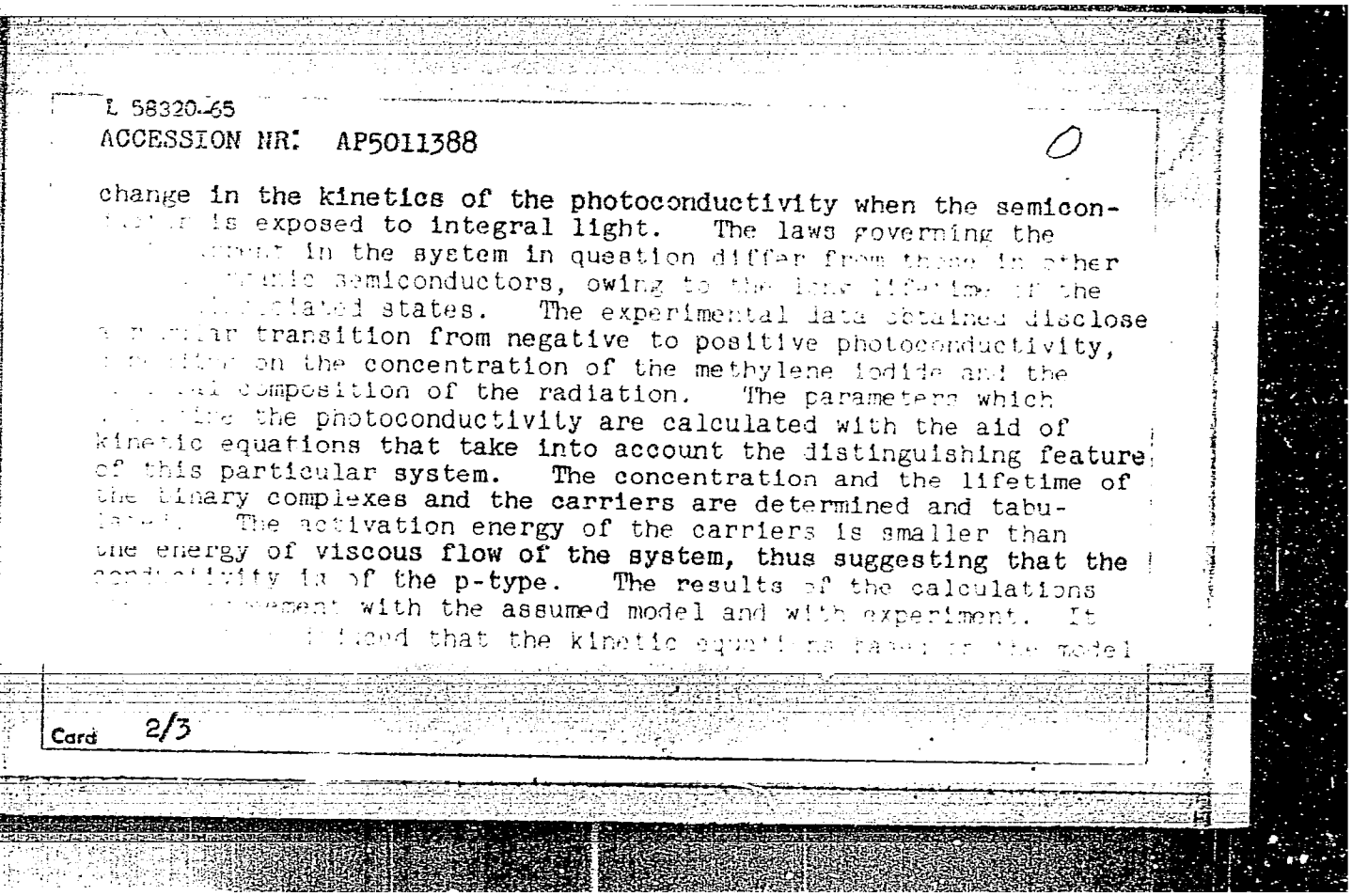
TITLE: Photoconductivity of the methylene iodide -- diethyl ether system 21

SOURCE: IVUZ. Fizika, no. 2, 1965, 112-118

TOPIC TAGS: organic semiconductor, photoconductivity, methylene iodide, diethyl ether, photocurrent, absorption spectrum, photoconductivity kinetics

ABSTRACT: The liquid semiconductor made up by mixing methylene iodide with diethyl ether was investigated by means of a procedure described by the authors earlier (Izv. vuzov SSSR Fizika, No. 5, 28, 1964). The liquids were carefully cleaned before the tests. The experiments show that increasing methylene iodide content, the long wave boundary of the continuous-absorption region shifts towards the longer wavelergths, and this shift is proportional to the logarithm of the concentration. This is accompanied by a

Card 1/3



L 58320-65
ACCESSION NR: AP5011388

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change in the kinetics of the photoconductivity when the semiconductor is exposed to integral light. The laws governing the [illegible] in the system in question differ from those in other [illegible] semiconductors, owing to the long lifetime of the [illegible]ated states. The experimental data obtained disclose a [illegible]ar transition from negative to positive photoconductivity, [illegible] on the concentration of the methylene iodide and the [illegible] composition of the radiation. The parameters which [illegible] the photoconductivity are calculated with the aid of kinetic equations that take into account the distinguishing feature of this particular system. The concentration and the lifetime of the binary complexes and the carriers are determined and tabu[illegible]. The activation energy of the carriers is smaller than the energy of viscous flow of the system, thus suggesting that the conductivity is of the p-type. The results of the calculations [illegible] agreement with the assumed model and with experiment. It [illegible]ollowed that the kinetic equations based on the model

Card 2/3

L 58320-65
ACCESSION NR: AP5011388

employed in the paper can be used for a quantitative analysis of liquid organic semiconductor systems. Original article has: 5 figures, 13 formulas, and 1 table.

[illegible]: Dnepropetrovskiy inzhinerno-stroitel'nyy institut
Engineering and Construction Institute

[illegible]

[illegible]: 005 OTHER: 000

L 25683-66 EWT(l)/EWT(m)/EWP(j)/EWA(h)/EWA(l) IJP(c) AT/RM

ACC NR: AP6002077 SOURCE CODE: UR/0139/65/000/006/0005/0008

AUTHOR: Kopylov, YU. A.; Stolovitskiy, YU. M.

ORG: Dnepropetrovsk Engineering-Construction Institute (Dnepropetrovskiy inzhenerno-stroitel'nyy institut)

TITLE: Investigation of the dependence of the negative photoconductivity in organic liquids on the irradiation intensity and on the potential difference

SOURCE: IVUZ. Fizika, no. 6, 1965, 5-8

TOPIC TAGS: photoconductivity, organic semiconductor, volt ampere characteristic, halide, diethyl ether, electron recombination, light absorption, electron emission, metastable state

ABSTRACT: The purpose of the experiment described was to check on the applicability of a previously developed model for the occurrence of negative photoconductivity in liquid organic semiconductors (Izv. Vuzov SSSR, Fizika, No. 2, 1965). The measurements were made by a technique described in the earlier papers. The investigations were made on binary systems of diethyl ether with one of the halide derivatives of methane or benzene. The dependence on the irradiation intensity and on the potential difference was obtained by using stationary values of the current, established after several dozen seconds following the start of the irradiation. The results show that the volt-ampere dependence characteristic is linear, and the lux-ampere characteristic is given by a complicated curve which becomes hyperbolic at sufficiently high intensity. The results of the experiments are discussed in light of the previously

Card 1/2

L 25883-66

ACC NR: AP6002077

developed model, according to which absorption of light of a definite spectral composition causes release of electrons from their metastable positions, and this in turn leads to recombination with holes so that the conductivity of the sample decreases. The obtained volt-ampere characteristics and conductivity curves agree with this model. Orig. art. has: 4 figures and 3 formulas.

SUB CODE: 20/ SUBM DATE: 25Feb64/ ORIG REF: 005/ OTH REF: 002

Card 2/2

L 35088-65 EPF(c)/EWP(j)/EWT(m) Pc-4/Pr-4 RM

ACCESSION NR: AP5006702 S/0076/65/039/002/0491/0493

AUTHOR: Kopylov, Yu. A.; Trofimova, T. N.; Stolovitskiy, Yu. M.

TITLE: Temperature dependence of the electrical conductivity of monohalo substituted benzenes and their diethyl ether solutions

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 2, 1965, 491-493

TOPIC TAGS: monohalobenzene, organic liquid conductivity, organic solution conductivity, chlorobenzene conductivity, bromobenzene conductivity, iodobenzene conductivity

ABSTRACT: The authors measured the temperature dependence of the electrical conductivity of chlorobenzene, bromobenzene, iodobenzene, and their solutions in diethyl ether. The results for the specific conductivities were close to data found in the scientific literature (J. Hart, A. G. Mungall, Trans. Amer. Inst. elect Engrs., pt. 3, 34, 1295, 1958). Attempts to give a theoretical interpretation of the observed effects proved unsuccessful. In spite of the semiconductor character of the temperature-conductivity relationship, it is very hard to pass judgment on the electrical conductivity mechanisms of the studied liquids. Orig. art. has: 1 formula, 1 figure, and 2 tables.

Card 1/2

L 25038-65

ACCESSION NR: AP5006702

ASSOCIATION: Dnepropetrovskiy Inzhenerno-stroitel'nyy institut (Dnepropetrovsk engineering-construction institute)

SUBMITTED: 18Feb64 ENCL: 00 SUB CODE: OC, EM

NO REF SOV: 005 OTHER: 004

Card 2/2

KOPYLOV, Yu.A.

Effect of the interrelation of elements in the system electrode - organic liquid - electrode on its conductivity. Zhur.fiz.khim. 39 no.7:1595-1601 Jl '65. (MIRA 18:8)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

L 22920-66 EWT(l)/EWT(m)/EWP(j)/EWA(h)/EWA(l) IJP(c) AT/RM
ACC NR: AP6008112 SOURCE CODE: UR/0139/66/000/001/0085/0092

AUTHORS: Kopylov, Yu. A.; Trofimova, T. N.

ORG: Dnepropetrovsk Construction Engineering Institute (Dnepropetrovskiy inzhenerno-stroitel'skiy institut)

TITLE: Investigation of the influence of x-rays on the electric conductivity of liquid organic photoconductors

SOURCE: IVUZ. Fizika, no. 1, 1966, 85-92

TOPIC TAGS: electric conductivity, photoconductivity, organic semiconductor, x ray effect, ionization, semiconductor carrier, diethyl ether, halide, liquid property

ABSTRACT: The purpose of the investigation was to determine more accurately the character of the metastable electron attachment, which causes photoconductivity in liquid organic semiconductors based on diethyl ether into which halide-derivatives of benzene, methane, and other substances are introduced. To this end, the authors exposed the investigated liquids to x-radiation with maximum near a wavelength 1.5 Å, and measured the resistance of the liquid. The experi-

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ments have shown that the resistance of the exposed cell increased by thousands of times, so that the conductivity of the cell itself could be neglected. The x-ray exposure did not influence the conductivity of diethyl ether, the halide substitutes of methane and their solutions in the diethyl ether. The conductivity of chlorobenzene and bromobenzene increased upon irradiation, and resumed the earlier value after the removal of the excitation. The results have shown that the only liquids whose conductivity changes as a result of exposure to the x-rays are those containing molecules with a benzene ring. On the basis of the assumption that the primary cause of the change in conductivity are Compton electrons, the variation of the conductivity under the influence of x-rays is compared with the variation of photoconductivity in these systems. It is concluded on the basis of this comparison that the electrons can become metastably fixed both to molecules of the halide derivatives of methane and benzene and to the molecules of the diethyl ether. Several models are proposed to explain these phenomena. While the variation of the resistivity under the influence of the exposure had a complex pattern, it was fully reproducible. The laws governing the photoconductivity and

L 22920-66
ACC NR: AP6008112

the change in conductivity under x-ray exposure are interpreted from the point of view of the following mechanisms: ionization of molecules, production of carriers, carrier motion, carrier recombination. A kinetic equation is derived by a method proposed earlier (Izv. vuzov SSSR, Fizika, No. 2, 1965 and earlier), to take into account the simultaneous occurrence of all these processes. This equation is found to fit the experimental data. Orig. art. has: 4 figures and 8 formulas.

SUB CODE: 20/ SUBM DATE: 05May64/ ORIG REF: 009/ OTHER REF: 003

Card 3/3

L 21831-66 EWP(j)/EWT(l)/EWT(m) IJP(c) AT/RM/DS/WW
ACC NR: AP6003498 SOURCE CODE: UR/0364/66/002/001/0057/0061

50
49
8

AUTHOR: Kopylov, Yu. A.; Stolovitskiy, Yu. M.

ORG: Dnepropetrovsk Civil Engineering Institute (Dnepropetrovskiy inzhenerno-stroitel'nyy institut)

TITLE: Study of the rapidly relaxing photoconductivity component in organic liquids

SOURCE: Elektrokhimiya, v. 2, no. 1, 1966, 57-61

TOPIC TAGS: methyl iodide, photoconductivity, free electron

ABSTRACT: The causes of negative photoconductivity in ether solutions of iodobenzene and methylene iodide were studied. According to an existing hypothesis, positive photoconductivity is caused by intermolecular transition of the electron after its excitation and subsequent dissociation of the resultant complex into current carriers in the form of molecular ions:

$$AB \xrightarrow{h\nu} AB^* \rightarrow A_+B^- \xrightarrow{U} A_+ + B^-. \qquad (1)$$

To explain linear recombination, it is assumed that recombination occurs not by

UDC: 621.315.592 : 547-14

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direct contact of A_+ and B^-, but through electrons freed from the metastable location in molecule B by radiation and by thermal motion. It is further assumed that the freed electron jumps rapidly without entering the secondary metastable state and terminates its travel by collision with electron vacancy A_+. Here the rate of recombination is determined by the number of freed electrons and is a linear function of the concentration of molecular ions B^-. The negative photoconductivity occurs when photoinduced recombination dominates the above current producing process (1). According to the hypothesis the negative photoconductivity should be preceded by some increase in photoconductivity due to the appearance of the mobile transition electrons which have a short lifespan. They thus contribute a small fraction of the total electroconductivity. Experimental verification of this effect will then serve as additional evidence in favor of the above hypothesis. The experiments were conducted in ether solutions of iodobenzene and methyl iodide. The measurement circuit consisted of an impedance bridge with a cathodic follower having an amplification coefficient close to unity. An SI-1 oscillograph with linear time sweep served as the recording instrument. This circuit records only those transition processes which occur at frequencies above 1 CB and registers relative electroconductivity changes $\Delta\sigma$ down to $\Delta\sigma/\sigma = 10^{-6}$. The conductivity cell was irradiated with square wave ultraviolet pulses. It was found that in the initial period of

L 21831-66
ACC NR: AP6003498

irradiation, the fast relaxing component reaches $\Delta\sigma/\sigma = 0.01\text{-}0.03$, but rapidly decreases along with the total decrease in conductivity and after 20-40 sec stabilizes at the $\Delta\sigma/\sigma \approx 10^{-5}$ level. It was established that the fast relaxing positive component is excited by radiation in the same spectral interval as negative photoconductivity. The photoactive spectral region does not completely overlap the self absorption band of solution and depends on the dissolved substance. This fact indicates that the electron is associated with B molecules, the halogen derivatives or products of their photochemical decomposition and not with solvent molecules. The long wavelength excitation boundary of the fast relaxing component may be used for the determination of the energy of capture of the electron. This energy is equal to 2.95 ev for methyl iodide solution and 3.24 ev for iodobenzene solution in diethyl ether. Orig. art. has: 3 figures.

SUB CODE: 07, 20/ SUBM DATE: 11Dec64/ ORIG REF: 005/ OTH REF: 000

Card 3/3 nst

L 30405-66 EWP(j)/EWT(l)/EWT(m) IJP(c) AT/RM/DS

ACC NR: AP6008091 SOURCE CODE: UR/0076/66/040/002/0389/0394

64
B

AUTHOR: Kopylov, Yu. A.; Stolovitskiy, Yu. M.; Trofimova, T.N.

ORG: Dnepropetrovsk Engineering-Construction Institute (Dnepropetrovskiy inzhenerno-stroitel'nyy institut)

TITLE: Investigation of the nature of the processes determining the presence of photoconductivity in organic liquids

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 2, 1966, 389-394

TOPIC TAGS: methane, benzene, halogen, photoconductivity, absorption spectrum

ABSTRACT: The authors performed an experimental investigation of the processes accompanying photoconductivity in liquids and solutions containing halogen derivatives of methane and benzene. The photoconductivity is not accompanied either by recombination luminescence, or phosphorescence with a duration of persistence above 10^{-4} sec. Consequently, the appearance of current carriers and their recombination occurs through the stage of degradation of the energy of the optic excitation into thermal kinetic energy. The authors established no variation of spectral absorption which relax together with photoconductivity, but established a yield of molecular iodine. The irreversible variations in the absorption spectra do not have a direct relationship to photoconductivity. The reason for the appearance of photocurrent carriers is the intermolecular charge transfer occurring as a secondary stage after the optical excitation. Possible mechanisms are proposed for the

Card 1/2 UDC: 541.14

Card 2/2 UV

PHASE I BOOK EXPLOITATION SOV/4861

Kopylov, Yu. M.

Sovetskiye stantsii kosmicheskikh luchey (Soviet Cosmic Ray Stations) Moscow, Izd-vo AN SSSR, 1960. 30 p. (Series: Mezhdunarodnyy geofizicheskiy god, 1957-1958-1959) Errata slip inserted. 1,500 copies printed.

Chief Ed.: A.D. Podol'skiy; Tech. Ed.: O.M. Gus'kova.

PURPOSE: This book is intended for astronomers and geophysicists.

COVERAGE: The book provides a brief description of the types of standard recording equipment used in cosmic ray stations during the IGY. The author describes only the main recording installations, such as the ASK-type ionization chamber, the neutron monitor, and the cubic telescope. The book does not deal with the problems of the analysis of cosmic ray variations or the problems of scientific methods, which, in the author's opinion, are sufficiently elucidated elsewhere. An appendix lists Soviet cosmic ray stations, giving location [geographic and geometric coordinates], station index number, and type of equipment used. Data

Card 1/3

BLOKH, Ya.L.; INOZEMTSEVA, O.I.; KAMINER, N.S.; KOPYLOV, Yu.M.; KOYAVA, V.K.; SERGEYEV, A.V.

Variations in the intensity of cosmic rays recorded Nov. 12-15, 1960. Geomag. i aer. 1 no.3:441 My-Je '61. (MIRA 14:9)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR, Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln Sibirskogo otdeleniya AN SSSR i Institut geofiziki AN GruzSSR.
(Cosmic rays)

31803
S/203/61/001/005/006/028
A006/A101

3,2410

AUTHORS: Kopylov, Yu.M., Okulov, Yu.I.

TITLE: Determining the position of the equator of cosmic radiation from data of schooner "Zarya"

PERIODICAL: Geomagnetizm i aeronomiya, v..1, no. 5, 1961, 658 - 661

TEXT: Information is given on results of measuring the latitudinal effect of the neutron component of cosmic radiation. Simultaneously all elements of the terrestrial magnetic field were measured along two sections of the Indian and Pacific Ocean during a passage of schooner "Zarya" in 1959-1960. The authors analyzed the results obtained for the purpose of determining the position of the equator of cosmic radiation and of comparing it with the position of the equator of the true magnetic field of the Earth according to the measurement made on the "Zarya". The neutron monitor employed is described and its circuit diagram is given. Its recording speed was about 3500 pulses/hour in the equatorial region; the statistical error was < 1%/degree. Curves of the latitudinal effect for the Indian Ocean and the Pacific show that the position of the equator of cosmic radiation in geomagnetic coordinates in the Pacific is -1°8 and coincides with the

Card 1/2

KOPYLOV, Yu.M.

Determination of the cosmic ray equator. Geomag. i aer. 5 no.1:166 Ja-F '65. (MIRA 18:4)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

BRONZOV, A.S.; DYUKOV, L.M.; KOPYLOV, Yu.M.; ONISHCHENKO, M.S.; VASIL'YEV, Yu.S.

Device for determining the angle of gradient of a well bore.
Biul. nauch.-tekh. inform. VIMS no.2:77 '63. (MIRA 18:2)

ACC NR: AT6027222 SOURCE CODE: UR/0000/66/000/000/0139/0142

AUTHOR: Kopylov, Yu. M.

38
36
B+1

ORG: none

TITLE: Possibility of increasing the effectiveness of recordings of the intensity of the neutron component of cosmic rays by the scintillation method

SOURCE: AN SSSR. Sibirskoye otdeleniye. Sibirskiy institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Issledovaniya po geomagnetizmu i aeronomii (Studies in geomagnetism and aeronomy). Moscow Izd-vo Nauka, 1966, 139-142

TOPIC TAGS: cosmic ray, radiation monitor, neutron radiation, neutron counter, cosmic ray intensity, scintillation counter

19

ABSTRACT: The possibility is discussed of recording cosmic neutrons with the aid of scintillation counters in combination with a local neutron generator and a neutron moderator. The method of local neutron generation is based on the generation of local neutrons in stars created as a result of nuclear interaction of fast neutrons with a local condensed medium. The frequency of secondary-neutron generation in various substances can be described on the assumption that in the generation of neutrons, the transverse cross section of σ nuclei is

Card 1/3

proportional to the atomic weight of the nuclei $A^{2/3}$ ($\sigma \sim A^{2/3}$). Then the observed frequency of neutron generation for a given mass of the substance is proportional to $A^{2/3}\ \nu\ (\rho/A)$, where ρ is the density of the substance, and ν is the multiplicity of neutron generation in the substance. The mean energy of secondary neutrons is ~3 Mev. Therefore, by using materials of high atomic weight (such as lead) in combination with a neutron moderator (paraffin or carbon), it is possible to eliminate the effects of the ambient medium and atmosphere on the detector. At the same time, the effectiveness of the system can be increased to 100% by employing large-area Li_2O-glass (enriched to 90.5% by the Li^6 isotope) and sensitive photomultipliers. A possible design of a neutron monitor for recording the intensity variations of the neutron component of cosmic rays is proposed (Fig. 1). It incorporates the following elements: (1) an external paraffin neutron moderator, which acts as a shield against radioactive background radiation, as an absorber of thermal atmospheric neutrons, and as a preliminary moderator of fast cosmic-ray neutrons; (2) a local generator (made of lead), which encircles the scintillator and serves as the principal generator of secondary neutrons; (3) an internal paraffin moderator, located directly above the scintillator, which serves as a moderator of secondary neutrons with thermal velocities, generated in the lead; (4) an Li_2O-glass scintillator; (5) a photomultiplier with a large-area photocathode optically coupled to a scintillator by light guide, the entire system being placed in a light proof casing; and (6) electronic signal

L 04885-67

ACC NR: AT6027222

D

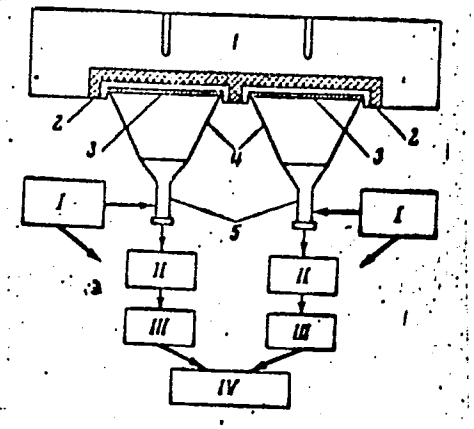


Figure 1. Block diagram of a neutron monitor.

I - power source; II - pulse amplifier;
III - discriminator with a scaler;
IV - recording unit.

amplifying, discriminating, and recording circuits. The design proposed should provide a sensitivity equal to that of a standard neutron monitor with boron counters, but with a much higher efficiency than the latter. Orig. art. has: 1 figure.

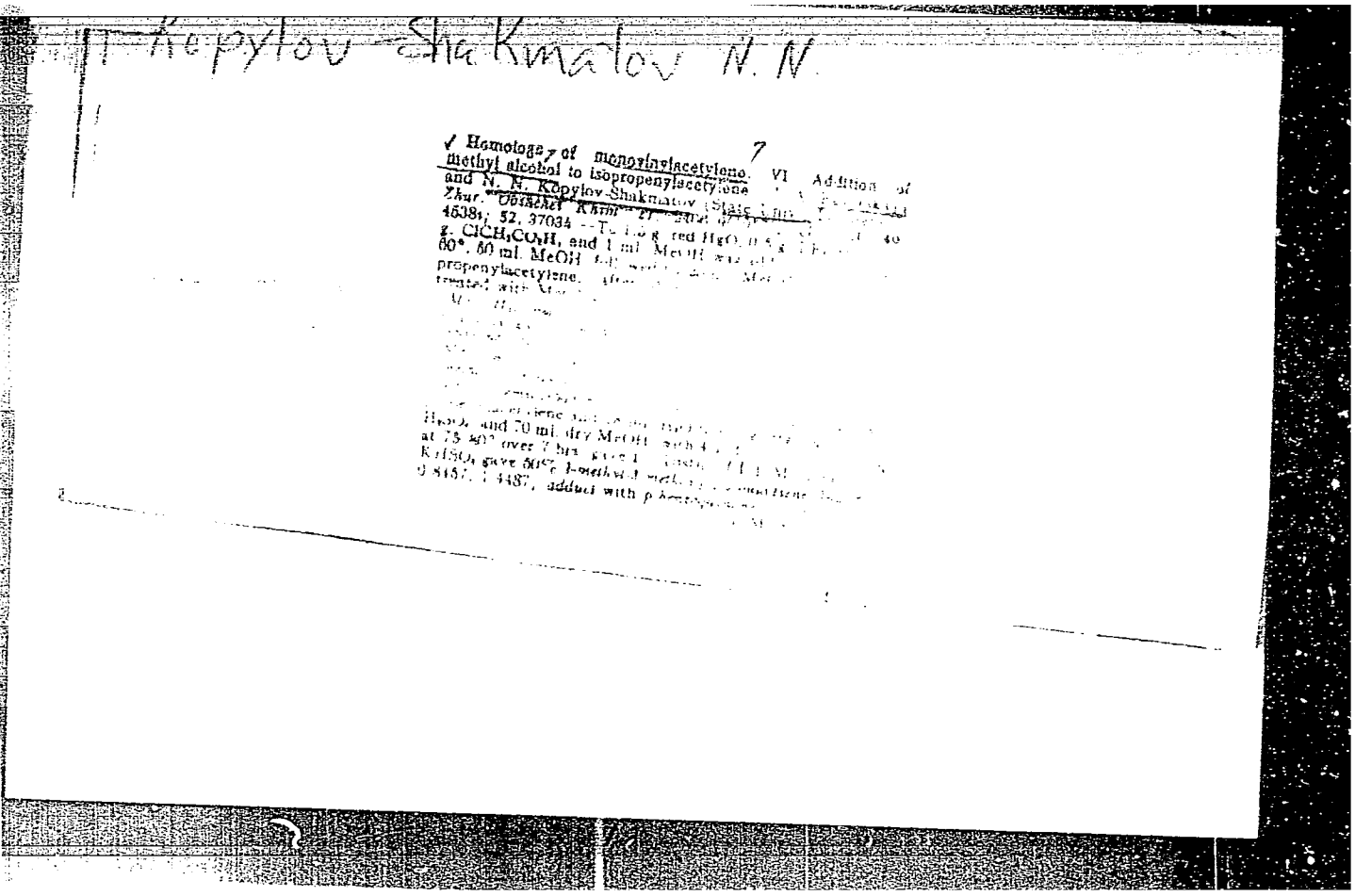
SUB CODE: 04, 18/ SUBM DATE: 25Dec65/ ORIG REF: 003/ OTH REF: 002

Card 3/3 2cfv

FAVORSKAYA, I.A.; KOPYLOV-SHAKHMATOV, N.N.

Homologs of monovinylacetylene. Part 6: Addition of methyl alcohol to isopropenylacetylene. Zhur. ob. khim. 27 no.9:2406-2409 S '57. (MIRA 11:3)

1. Leningradskiy gosudarstvennyy universitet.
(Methanol) (Acetylene)



Kopylov-Shakmatov N. N.

✓ Homologs of monoarylacetylene. VI Addition of methyl alcohol to isopropenylacetylene. and N. N. Kopylov-Shakmatov

Zhur. Obshchei Khim

4538; 52, 37034

g. $ClCH_2CO_2H$, and 1 ml MeOH

60°. 60 ml. MeOH

propenylacetylene.

treated with

H_2SO_4 and 70 ml. dry MeOH

at 75 over 7 hrs

$KHSO_4$ gave

0.8457, 1.4487, adduct with p

KOPYLOVA, A.

Reforming the ranks. Okhr. truda i sots. strakh. 6 no.5:17-19 My '63. (MIRA 16:8)

1. Predsedatel' Krasnodarskogo krayevogo sel'skogo soveta professional'nykh soyuzov.
(Krasnodar Territory—Agriculture hygienic aspects)

KOPYLOVA, A.A.

Growing lotus. Nauka i zhizn' 21 no.6:32b Je '54. (MLRA 7:6)

1. Assistent kafedry botaniki, fiziologii rasteniy i mikrobiologii Irkutskogo sel'skokhozyaystvennogo instituta.
(Lotus)

Kopylova, A.A.

USSR/Agriculture - Rice cultivation

Card 1/1 Pub. 86-15/33

Authors : Kopylova, A. A.

Title : Experiment in the cultivation of Far-Eastern wild rice

Periodical : Priroda 43/11, 101-103, Nov 1954

Abstract : A description is given of wild rice found growing along the Zeya and Burya Rivers and in the Maritime Territory. An account is given of experiments in cultivating this variety of rice in other regions, with figures of crop yields and indications as to the climatic conditions favorable to its growth. Illustrations.

Institution : ... Irkumskiy Sel'skokhozyaystvennyy institut

Submitted : ...

Kopylova A.A.

USSR/ Biology - Botany

Card 1/1 : Pub. 86 - 22/38

Authors : Kopylova, A. A.

Title : The lotus in the Far East

Periodical : Priroda 43/12, 105-106, Dec 1954

Abstract : The lotus, which is rare in Russia, being found only in the Volga delta and in the Caucasus, has been discovered also in Lake Khanka near Vladivostok. Some description is given of this plant, which is used as an ornament, as a food and for medicinal purposes. Illustration.

Institution : ..... Irkutsk Agric. Inst.

Submitted : .....

USSR/Cultivated Plants. Fodder Plants. H

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68250

Author : Kopylova, A.
Inst : Irkutsk Agricultural Institute.
Title : Lake Rice in Irkutsk Oblast'.

Orig Pub : S. kh. Sibiri, 1957, No 7, 91-95

Abstract : At the Irkutsk Agricultural Institute experiments were carried out on cultivating wild lake rice. Data are presented of the chemical composition of seeds, their germination, as well as results of phenological observations of rice in the reservoirs of the Irkutsk Oblast'. -- V. S. Shnal'ko

Card : 1/1

KOPYLOVA, A.D.

Research of the Scientific Research Institute of Geodesy, Aerial Photography, and Cartography in publishing maps having a reduced number of colors. Geod. i kart. no.8:48-51 O '56. (MLRA 10:1)
(Cartography)

KOPYLOVA, A.D.

Scientific principles for establishing sizes and shapes of cartographic designations. Geod.i kart. no.10:24-32 D '56.
(MLRA 10:2)

(Maps--Symbols)